

Amendements to The Specification:

In the specification, please amend paragraph 0002 at page 1, as follows:

The present invention relates to aerofoil-shaped gas turbine components such as rotor blades and ~~Stator~~ stator vanes, and to impingement tubes used in such components for cooling purposes.

In the specification, please amend paragraph 0003 at page 1, as follows:

Modern gas turbines often operate at extremely high temperatures. The effect on the turbine blades and/or stator vanes can be detrimental to the efficient ~~Operation~~ operation of the turbine and can, in extreme circumstances, lead to distortion and possible failure of the blade or vane. In order to overcome this risk, high temperature turbines may include hollow blades or vanes incorporating so-called impingement tubes. These are hollow tubes that run radially within the blades or vanes. Cooling air is forced into and along these tubes and emerges through suitable apertures into the void between the tubes and the inner surfaces of the hollow blades or vanes. Air expelled from the apertures impinges on the inner surfaces of the hollow blades or vanes (so-called "impingement cooling") and also creates an internal airflow to cool the blade or vane.

In the specification, please amend paragraph 0012 at page 3, as follows:

Figure 2 is a ~~Chordal~~ chordal cross-section through Figure 1 to show the spacing of an impingement tube from the inner surface of the blade or vane;

In the specification, please amend paragraph 0016 at page 3, as follows:

In the present description, reference will only be made to blades, for the ~~Sake~~ sake of simplicity, but it is to be understood that the invention is applicable to both blades and vanes of a turbine. The skilled person will appreciate that airways can be provided to the interior of either ~~Stator~~ stator vanes or rotor blades for the purpose of air-cooling.

In the specification, please amend paragraph 0018 at page 4, as follows:

As shown in Figure 2, the blade is preferably cast with internal ribs 5 extending in the general direction of chords of the aerofoil. In this case, the ribs extend around the leading edge 2

of the aerofoil. Although only one rib 5 is shown in this sectional view, there are usually several ribs radially spaced apart over the span of the blade and the provision of more than one such rib will be assumed during the remainder of this description. The advantage of this is that the ribs provide additional cooling surface area and may ~~seme~~ seem to guide the cooling air exiting from small holes (not shown) in the impingement tube towards the more heat-critical surfaces of the blade. Eventually, the spent coolant passes from the blade into the surrounding freestream through film cooling holes, slots or other apertures 11, as known in the art. Some of these may be provided in the trailing edge 6 of the blade, and in fact Figure 2 shows the aerofoil as provided with a trailing edge slot S.

In the specification, please amend paragraph 0021 at page 5, as follows:

As shown in Figure 2, the ribs 5 extend towards but do not touch the exterior of the impingement tube 4. However, a further rib 5<sup>1</sup> at or near the middle height region of the blade is sized to bridge the gap between the interior surface of the blade and the impingement tube, and thereby locates the adjacent ends of the impingement tube sections 4a, 4b. As shown in Figure 4, the side of the rib 5<sup>1</sup> facing towards the impingement tube may be configured to enhance the ability of the rib to locate the impingement tube sections. In its preferred form, the rib 5<sup>1</sup> is chevron-shaped 10 on the side facing the impingement tube to provide a more positive location, e.g., an interference fit, for the adjacent ends of the sections of the impingement tube. Optionally, the confronting ends of the two tube sections 4a, 4b may be bevelled in a complementary way to the chevron-shaped 10 rib.

In the specification, please amend paragraph 0023 at page 5, as follows:

The adjacent ends of the two tube sections 4a, 4b may confront each other across a small gap (Figures 1 and 5), or alternatively abut each other along a chordal line, which in Figure 4 is defined by the apex of the chevron shape 10 of the rib 5<sup>1</sup>.

In the specification, please amend paragraph 0024 at page 5, as follows:

Once inserted into the blade, the tube section 4a can be welded or otherwise fixed in place at its radially outer end; tube section 4b can be similarly fixed at its radially inner end. The depth of insertion of the impingement tube sections, and hence whether their inner ends abut or

not, can be controlled accurately, e.g., by adjusting the dimensions of the weld beads and/or the shaped rib 5<sup>1</sup> or 5<sup>11</sup>. In addition, the shaped rib can be arranged either to minimise leakage of cooling air through the gap (if present) between the adjacent ends of the impingement tube sections or, alternatively, by suitable design, can provide a predetermined flow of cooling air into the space between the ends of the impingement tube sections. For example, to minimise leakage through a gap as aforementioned, the rib 5<sup>1</sup> can be continuous over at least a substantial portion of the inner surface of the blade, so as to blank off the gap it covers; alternatively, the rib can be discontinuous as shown in Figure 3, to allow more cooling air flow.

In the specification, please amend paragraph 0025 at page 6, as follows:

One or both of the adjacent ends of the impingement tube sections can be closed and cooling can be enhanced by providing apertures 11 in or adjacent to the ends of the impingement tube sections to allow air to emerge from within the impingement tube sections and cool the inner wall of the blade. While it may be sufficient for these apertures 11 to be normal to the ends, it may be preferable to provide the sections with thicker material at the base so as to allow the apertures 11 to be angled, thereby causing air exiting from them to impinge on a predetermined part of the inner ~~Wall~~ wall of the blade for greater cooling efficiency.